Claims

1. A method of coating an SPR biosensor specific for an analyte to reduce protein fouling, the method comprising
    a. providing an SPR biosensor;
    b. providing a solution of 11-mercaptoundecanol;
    c. incubating the SPR biosensor in the 11-mercaptoundecanol solution to form a self-assembling monolayer (SAM);
    d. incubating the SPR with SAM in a solution of epichlorohydrin and diglyme;
    e. incubating the SPR from step d in ethanolamine;
    f. preparing a solution of EDC/NHS and a biocompatible polymer;
    g. incubating the SPR of step e in the solution of step f;
    h. providing a ligand specific for the analyte in a solution;
    i. incubating the SPR of step g in the solution of step h to permit the ligand to react with the SPR of step g; and
    j. washing the SPR of step i to remove an unreacted ligand, thereby providing an SPR capable of reacting with the analyte.
2. The method of claim 1 wherein the biocompatible polymer is prepared from carboxymethylated hyaluronic acid, OPSS-PEG-NHS, alginic acid, humic acid, polymethacrylate co-vinyl acetate or polyacrylic co-vinyl acetate.
3. The method of claim 1 wherein the analyte is an antigen and the ligand is an antibody.
4. The method of claim 3 wherein the antigen is cardiac myoglobin and the antibody is anti-myoglobin.
5. The method of claim 3 wherein the antigen is cardiac troponin I and the antibody is anti-cardiac troponin I.
6. The method of claim 3 wherein the antigen is interleukin-6 (IL-6) and the antibody is anti-IL-6, whereby the biosensor can monitor wound healing.
7. The method of claim 3 wherein the antigen is NSE and the antibody is anti-NSE, whereby the biosensor can monitor patients for ischemic stroke.
8. The method of claim 3 wherein the antigen is S-100B and the antibody is anti-S-100B, whereby the biosensor can monitor patients for ischemic stroke.

9. The method of claim 3 wherein the antigen is SMN1-4 and the antibody is anti-SMN1-4, and further comprising step k comprising preparing a cellular extract, whereby a low value is indicative of spinal motor atrophy.
10. A method of coating an SPR biosensor specific for an analyte to reduced protein fouling, the method comprising
    a. providing an SPR biosensor;
    b. providing a solution of MHA or NHS-MHA with HT;
    c. incubating the SPR biosensor in the MHA-HT solution for a time sufficient to permit the formation of SAM;
    d. providing a solution of a ligand specific for the analyte;
    e. incubating the SPR biosensor with SAM in the ligand solution for a time sufficient for the ligand to react with the SAM, thereby providing the biosensor with ligands specific for the analyte.
11. The method of claim 10 wherein the analyte is an antigen and the ligand is an antibody.
12. The method of claim 11 wherein the antigen is cardiac myoglobin and the antibody is anti-myoglobin.
13. The method of claim 11 wherein the antigen is cardiac troponin I and the antibody is anti-cardiac troponin I.
14. The method of claim 11 wherein the antigen is interleukin-6 (IL-6) and the antibody is anti-IL-6, whereby the biosensor can monitor wound healing.
15. The method of claim 11 wherein the antigen is NSE and the antibody is anti-NSE, whereby the biosensor can monitor patients for ischemic stroke.
16. The method of claim 11 wherein the antigen is S-100B and the antibody is anti-S-100B, whereby the biosensor can monitor patients for ischemic stroke.
17. The method of claim 11 wherein the antigen is SMN1-4 and the antibody is anti-SMN1-4, and further comprising step k comprising preparing a cellular extract, whereby a low value is indicative of spinal motor atrophy.